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ABSTRACT

The fact sheet presents information, resources, and references concerning vocational education for disabled postsecondary students. Introductory sections define vocational education and cite federal legislation affecting vocational education for disabled persons. Suggestions for students on how and where to find career information list print resources and agency contacts. Types of institutions offering vocational programs are described, and the following components of vocational programs are discussed: (1) vocational assessment; (2) curriculum modifications and adaptations; and (3) technological devices that enhance disabled workers' job performance. Effective counseling of students, suggestions for assisting instructors who are dealing with handicapped students for the first time, and the role of the job development coordinator are also discussed. The fact sheet concludes with sections on classroom adaptations, Vocational Student Organizations (VSO's), interagency cooperation, and personnel preparation. Lists of selected resources and readings are appended. (JW)

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EDUCATION FOR EMPLOYMENT

A Guide to Postsecondary Vocational Education for Students with Disabilities (1986–87 Edition)

Opportunities for people with disabilities in employment are expanding. Years of affirmative action, promotion and disabled consumer involvement have clearly established the employment potential of disabled people. Now, what remains is the development of adequate work preparation programs.

Participation in vocational education can be viewed as an essential pathway to employment for students with disabilities. Having marketable vocational skills is one of the most impressive credentials that anyone can present to a prospective employer. For students with disabilities, such skills are proof of their ability to perform specific job functions. Through work disabled persons can achieve success and develop a sense of self-worth and independence—alongside their nondisabled peers.

In addition, as the nation's economy undergoes rapid technological advances and demographic changes a great demand exists to train and re-train adults for newly created jobs. Postsecondary institutions such as community and junior colleges, vocational-technical schools, and postsecondary vocational and career schools can prepare disabled students to meet the changing employment needs of our nation's competitive job market.

The purpose of this paper is to present information, resources, and references concerning vocational education of disabled postsecondary students so that vocational administrators and instructors, vocational evaluators, counselors, and other support staff can assess their efforts to provide equal opportunities for students with disabilities to participate fully in all facets of vocational education. For the student, practical suggestions are included for effective accommodation through both regular and special instructional arrangements.

VOCATIONAL EDUCATION DEFINED

Vocational education as defined by recent 1984 legislation entitled the Carl D. Perkins Vocational Education Act (P.L. 98-524) means "organized educational programs which are directly related to the preparation of individuals in paid or unpaid employment in such fields as agriculture, business occupations, home economics, health occupations, marketing and distributive occupations, technical and emerging occupations, modern industrial arts and agricultural, and trades and industrial occupations, or for additional preparation for a career in such fields, and in other occupations requiring other than a baccalaureate degree or advanced degree and vocational student organization activities as an integral part of the program."

According to the 1985 American Vocational Association Fact Sheet, there are more than 26,000 institutions nationwide that offer vocational programs (see chart on page 2). Vocational education can be delivered at the secondary, postsecondary or adult level.

LEGISLATIVE PERSPECTIVE

Since the early 1970's there has been an appreciable increase in the national commitment to expand and improve opportunities available to handicapped individuals. Congress has passed legislation mandating the civil rights of people with disabilities in public education, vocational training, and job placement. Federal laws have motivated vocational educators to provide programs so that disabled students can be served in the least restrictive environment and be provided an equal opportunity to participate in and benefit from programs and activities receiving federal financial assistance.

Federal legislation affecting vocational education for people with disabilities include:

- The **Education of the Handicapped Act** and Amendments which revises and extends the Education for All Handicapped Children Act of 1975, requires a free and appropriate public education for every handicapped individual between the ages of 3 and 21.

- Section 504 of the **Rehabilitation Act of 1973** and the implementing Regulations and Amendments requires access and participation for all "qualified handicapped individuals"—in postsecondary education, training, and employment programs that receive federal funds. According to the Regulations, a "qualified handicapped individual, with respect to postsecondary and vocation-

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INSTITUTIONS OFFERING VOCATIONAL PROGRAMS

TYPE OF INSTITUTION	DESCRIPTION
General High School	Offers fewer than six vocational education programs.
Comprehensive High School	A general school offering programs in at least six different vocational subjects, but in which the majority of students are not enrolled in vocational education.
Vocational High School	A specialized secondary school that offers a full-time program of study in both academic and vocational subjects with the majority of the students enrolled in vocational education programs.
Secondary Area Vocational Center	A shared-time facility that provides instruction in vocational education *only* to students throughout a school system or region. Students receive the academic portion of their education programs in regular high schools or other institutions.
Postsecondary Area Vocational School	A *non-degree* granting institution offering instruction in vocational and technical education only.
Community College	A two-year postsecondary *degree granting* institution offering a comprehensive program of instruction in both general and vocational-technical education and offering a transfer program to higher education institutions.
Technical Institution	A two-year postsecondary *degree granting* institution offering instruction primarily in vocational and technical education.
Specialized Postsecondary School	A specialized postsecondary school usually offering preparation in one occupational area.
Skill Center	Usually separate institutions specializing in providing vocational education to economically disadvantaged students.
Four-Year Institutions offering Two-Year Programs	
Private Secondary	
Private Postsecondary	

(American Vocational Association Fact Sheet, 1985)

al education, is defined as one "who meets the academic and technical standards requisite to admission or participation in the recipient's education program or activity."

- The Job **Training Partnership Act** (1983) provides job training funds to be targeted at handicapped and hard to serve populations, both youth and adults.

- The **Carl D. Perkins Vocational Education Act** (1984) is intended to make vocational education programs accessible and appropriate to all persons, including those who are handicapped and disadvantaged—and to ensure that required supplemental services are available.

The 1980's bring new challenges, as the first generation of disabled students covered by the provisions of the Education for All Handicapped Children Act of 1975 graduate from secondary schools. Parents, educators, and policy makers are redirecting their focus to the problems of transition into secondary and through postsecondary education to employment opportunities for all individuals who are disabled. With the continuing success of integrating students who have mild/moderate disabilities into vocational education, the goal now is to continue to improve services and to achieve competitive employment for severely disabled students.

The legislation has created a strong incentive for including disabled students in vocational education. But disabled workers themselves have proven their value in the world of work. People with all kinds of handicaps have repeatedly demonstrated their reliability in performing useful and productive work. The President's Committee on Employment of the Handicapped reports that the work record of handicapped employees compares favorably with the nondisabled population in every way—their ability to perform tasks, their safety records, their attendance, and their advancement.

FOR STUDENTS: HOW AND WHERE TO FIND CAREER INFORMATION

As students begin to consider vocational choices, the first step is to seek out as much information as they can find about the careers that interest them. People with disabilities are capable of performing a wide range of jobs so that students can and should first evaluate their interests—and then narrow down their choices by weighing their vocational abilities with possible limitations imposed by their disability (keeping in mind that technological adaptations and worksite modifications can be made). After identifying vocational areas of interest and ability (see upcoming section on Vocational Assessment), students will be better prepared to explore the array of vocational opportunities available. A good way to start the process is to meet with a school counselor who can direct the student to career sources and provide help in how to use them. Other places to find information are high school and college career information centers and public libraries. Important volumes to check in the library are the **Dictionary of Occupational Titles** and the **Occupational Outlook Handbook.**

The **Dictionary of Occupational Titles (DOT)** describes occupations within our economy and provides information about the physical demands, working conditions, and aptitudes required for a specific job. The **Occupational Outlook Handbook** is published every two years, providing the most current employment data and trends concerning more than 850 occupations in a variety of major industries. Specific information provided for each major job includes: job duties, personal training and educational qualifications for the job, salary range, advancement opportunities, and additional information sources. Both the **DOT** (available for $23.00) and the **Occupational Outlook Handbook** (available for $20.00) are published by the U.S. Department of Labor and may be ordered by writing or calling the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

Information about the local job market can be obtained by writing to one's state Department of Labor or local Employment Security Office. Offices are listed with addresses in the **Occupational Outlook Handbook**.

Also useful are **Career Information Delivery Systems (CIDS),** which are computerized information banks giving information about occupations that fit the interests, aptitudes, training and other preferences or needs expressed by the inquirer. The systems are located on computers in 44 states at over 10,000 places across the country. For the address of the nearest location contact the **National Information Coordinating Committee—NOICC** (see Selected Resource List).

Another source of job analysis information is the **V-TECS** catalog which provides detailed job descriptions of specific occupations. There are currently more than 140 **V-TECS** catalogues available that provide in-depth analysis of more than 350 job titles as defined by the **DOT.** Information about **V-TECS** catalogs may be obtained from Vocational Technical Education Consortium of States, (V-TECS), 795 Peachtree Street, NE, Atlanta, GA 30365.

Other suggestions include:

- Students can write for more information from trade and professional organizations representing people in careers that interest them. **The Encyclopedia of Associations,** found in most libraries, lists thousands of groups and unions along with descriptions and addresses. The **National Association of Trade and Technical Schools (NATTS)** and the **Association of Independent Colleges and Schools (AICS)** can provide information on accredited postsecondary career schools throughout the United States (see Selected Resource List).

- A student may find it helpful to contact people with similar disabilities who work in occupations under consideration. Those people can give a realistic picture of specific job requirements. To find help locating role models a student could contact the Governor's Committee on Employment of the Handicapped in one's own state (or contact HEATH for a State Resource List). The state Vocational Rehabilitation agency, a Center for Independent Living, or a state or local disability organization might also be helpful. Additional sources are listed in the HEATH fact sheet, **Career Planning and Placement Strategies for Postsecondary Students,** available free upon request from the HEATH Resource Center.

- A student may want to explore the possibility of an apprenticeship program. Such programs exist in over 750 different "apprenticeable" occupations found in such industries as electronics, construction, metal working, public administration, medical and health care. To find out about them start with the local high school guidance office. Also, contact the apprenticeship representative in the local state's Department of Labor. Addresses are available from the U.S. Bureau of Apprenticeship and Training (see Selected Resource List).

- A student may be eligible to receive services from a state Vocational Rehabilitation agency. Vocational Rehabilitation is a public agency, set up in each state to assist eligible disabled people with services they need to become employable. These services vary from state to state. Vocational Rehabilitation (VR) might provide the cost of special equipment, readers, interpreters, and other important aids. In some cases, the agency may provide full or partial funding for tuition and other educational expenses.

A student with a disability should be in touch with a VR counselor during high school or soon after a disabling condition occurs. Some high schools offer a joint service between their school counselors and a VR counselor who is assigned to the school system.

With all the available information gathered, a student can be prepared to make some career decisions and enroll at a vocational-technical school, in an apprenticeship program, community college, or university of his/her choice.

COMPONENTS OF VOCATIONAL PROGRAMS

The primary function of a vocational education program is to teach work skills to its students. A vocational program that provides equal access and participation ensures disabled students the chance to develop their maximum vocational potential. This section will discuss a range of vocational services which are part of vocational education programs: vocational assessment, curriculum modifications, technological devices, counseling, support for instructors, and job development and placement.

Vocational Assessment

The basic purpose of vocational assessment is to assist individuals to identify career/vocational interests and goals. Information from the vocational assessment provides constructive feedback about an individual's vocational interests, abilities, preferred learning style, and potential. Most importantly, vocational assessment when effectively administered and interpreted can provide direction for selection of an appropriate vocational program, suggest necessary support services, and identify modifications or adaptations important for an individual to succeed in a vocational program.

Although there is a lack of consensus by professionals about how extensive and complete the assessment should be, the basic components of a vocational assessment include: **interview and behavioral observation** of the handicapped individual being assessed; **work samples** including "hands-on" activities using the same materials, tools, and tasks found in the real work setting; **psychometric tests** measuring an individual's aptitude, interest, dexterity, and academic achievement; and **situational assessment** which simulates the actual work conditions to assess work behaviors.

The results of a vocational assessment are important for educators, parents, counselors, and all service providers in assisting handicapped individuals to shape and plan both present and future career goals. Assessment information can provide a comprehensive profile of an individual's strengths and weaknesses as they relate to vocational program possibilities. However, information collected through vocational assessment should not be viewed in isolation i.e. available job opportunities in a particular state or community may limit vocational program possibilities due to economic reasons.

For school age populations, information from a vocational assessment can help formulate present vocational goals and future transitional needs (for continued services after high school) as part of the Individualized Education Plan (IEP). For the post-secondary aged handicapped individual, Vocational Rehabilitation agencies have traditionally been the primary source for vocational assessment services. Information on vocational strengths, interest, and abilities should be written into the Individualized Written Rehabilitation Plan (IWRP) by Vocational Rehabilitation counselors serving handicapped clients. The collaborative efforts of all service providers is critical to ensure the successful implementation of vocational assessment recommendations. In addition to the state Vocational Rehabilitation agency, one can contact the school counselor, the State Division of Vocational Education, or the State Developmental Disabilities Council for information on obtaining a vocational evaluation.

HEATH has received many inquiries from mildly to moderately handicapped young adults who are not eligible for Vocational Rehabilitation and have not had previous vocational preparation or opportunities while in school. The question often asked is, "Where can one go for additional testing, training, or in some cases, retraining?" The options can be numerous, although sometimes difficult to locate. Some suggestions follow.

For the **mildly to moderately handicapped adult out of school**, a career counselor and/or the coordinator of disabled student services at the local university, community college, or vocational-technical school can interview and assess (usually through paper and pencil tests) career interests, abilities, and strengths. In addition to career counseling, there are numerous private non-profit community based organizations (i.e. Goodwill Industries, Association for Retarded Citizens), as well as private sources (i.e. private rehabilitation certified vocational evaluators, for-profit agencies) that provide assessment services to handicapped individuals. Another excellent resource is the State Special Needs Coordinator of the State Department of Education, who is responsible for vocational education services and programs for handicapped, disadvantaged, and limited English speaking persons. Contact HEATH for the name and telephone number of the Special Needs Coordinator in one's state.

Curriculum Modifications and Adaptations

There may be instances where a student is limited by his/her particular disability from satisfactorily completing a course goal or assignment as it is presented by the vocational instructor. Yet, if the curriculum is modified slightly to meet the student's need the materials may then be successfully mastered by the student—without compromising the content of the material or lowering program standards. It is important that students and instructors alike recognize that such curricular modifications are **variations in the presentation of information**, and should in no way change the substance of the material.

One such area of difficulty is **textbook language level** which may be highly technical and unfamiliar. Some schools have solved this problem for students with handicaps by taping the text—audio tapes for students with visual or learning disabilities, video tapes (sometimes signed or captioned) for those with hearing impairments. The objective is to simplify and illustrate the language in ways that make the words and concepts meaningful. Another solution to the problem of technical

textbook language is to provide a vocabulary-building seminar for students who need that help in a given area.

Instructors are also finding that **translating written information into graphic aids** such as charts, maps, illustrations, models, and other media are successful aids for teaching students with various disabilities. Such hands-on learning is valuable for non-disabled students as well. **Puzzled About Educating Special Needs Students?**, annotated in the Selected Reading List at the end of this fact sheet, is a collection of materials on other curricular modifications that could also be used.

Selecting appropriate instructional materials, modifying existing materials, and exploring methods of instruction are often the key to the success of disabled students enrolled in regular vocational programs.

Technological Devices

The high level of technology achieved over the last several years has brought with it an explosion of devices that enable many handicapped workers to handle tasks they would otherwise not be able to perform. Some of these devices (like elevating wheelchairs or reading machines) are used regularly by individuals in a variety of activities. Others (like one-handed typewriters, reachers, directional knobs) are specifically engineered to do particular work tasks. Some are simple or home-made gadgets, while others are sophisticated equipment (i.e. robotics, laser technology). Some are widely known and marketed. Others have been devised for specific individuals and have not yet reached public attention.

The purpose of technological devices is to provide the support that makes individual performance adequate to meet the demands of the workplace. In other words, such devices enable disabled workers to perform satisfactorily the same job that their nondisabled colleagues perform.

For example, simple devices that may be used by persons with **mobility impairments** include folders, clamps, and high friction surfaces (such as rubber mats) that prevent objects from sliding. Typewriters and other equipment can be modified so that knobs, dials, or keys can be manipulated from one side. For workers whose movements are unsteady, a larger typewriter keyboard, keyboard guard, or computer terminal increases accuracy. Reachers, lazy Susans, and knobs placed farther apart than usual are other useful devices and adaptations. Mouthsticks, head wands, and even eye movements are now successfully used to operate computer keyboards, communication boards, or other equipment by people who do not have use of their hands.

There is a wide range of sophisticated devices for use by **hearing impaired persons.** These include sound amplifiers, signaling devices using lights, buzzers, or tactile vibration and telecommunications devices for the deaf (TDD) that send printed words over telephone wires. Amplifiers, lights, vibrators and teletype can be added to various pieces of work equipment to make them accessible to deaf and hearing impaired workers. (See HEATH's **Hearing Impaired Students in Postsecondary Education and Information from HEATH** May '86 Newsletter: **Computers and Technology.**)

Perhaps some of the most remarkable technology has been developed for **blind and visually impaired persons.** Print magnifiers, "talking" calculators, and machines that convert printed text into spoken words (Kurzweil Reader) and computer generated voice synthesizers are some examples. At a work station, large knobs with directional handles on machinery, tactile markings on measurement tools, and liquid level indicators (where a tone is sounded when the liquid being poured reaches the level to be measured) are useful adaptations for those who do not see. The American Foundation for the Blind publishes a catalogue of aids and appliances for use by people with visual impairments.

Some instructors have been creative in improvising ways to modify tasks to compensate for a **short memory** or **attention span** (often a problem for learning disabled or head injured persons.) In training for laboratory or food service work, for instance, racks have been devised to contain the exact number of items to work on, such as jars to be filled or envelopes to be stuffed so the worker doesn't have to keep count. Red lines on measuring devices or colors coded on parts to be assembled are other mechanisms that simplify tasks.

Where can one go to find devices that are available to buy, or to find out ideas that others use to simplify tasks of the classroom or workplace? Two excellent national computerized data banks are **ABLEDATA** and **JAN—the Job Accommodation Network** (see Selected Resource List). Local sources of information on technology are community service organizations—chapters of the National Association of the Deaf, National Federation of the Blind, United Cerebral Palsy, Association for Children and Adults with Learning Disabilities, and others. Medical organizations and treatment centers (hospitals, rehabilitation centers, Easter Seal clinics, etc.) can also be helpful.

Another productive resource for learning about assistive devices is to visit a rehabilitation engineering exhibit. RESNA, Association for the Advancement of Rehabilitation Technology (see the Selected Resource List) can inform you of regional conferences of such exhibits. Some vocational/technical schools with large numbers of handicapped students send one or more of their counselors to the rehabilitation engineering exhibit in their state or region to see the very latest in technology.

A student and a counselor working together can compare available devices to identify which would be the most appropriate for the student's needs. A student who has been living and managing a disability for years may know what works best. A VR counselor, drawing on the resources of the VR agency, may be able to provide the necessary equipment.

Counseling

Counseling of students is assured by the Carl D. Perkins Vocational Education Act of 1984 (Section 204) which states:

"Each handicapped student who enrolls in vocational education programs shall receive:

1) assessment of interest, abilities and special needs of such students with respect to completing successfully the vocational education program;

2) special service(s), including adaptation of curriculum, instruction, equipment and facilities, designed to meet the needs identified above (item #1);

3) guidance, counseling and career development activities conducted by professionally trained counselors who are associated with the provisions of such special services; and,

4) counseling services designed to facilitate the transition from school to post-school employment and career opportunities."

Counseling of students is a component of all postsecondary programs and includes guidance in areas of academic, personal, financial, and career concerns. Counseling in vocational-technical schools covers the same areas, but concentrates more heavily on career guidance and/or placement.

Some suggestions to remember in assisting handicapped students to make decisions are:

- Encourage students to explore a variety of possibilities so they are not pressured into a particular field by parents or others.

- Know the local job picture. In some areas particular industries (health care or data processing, for instance) are actively hiring while others (perhaps forestry or certain types of manufacturing) are not. Students need realistic information about where jobs are available. Counselors might have to advise students to be prepared to relocate in order to work in certain fields. This is an important consideration for a person who depends on support services, accessible housing and transportation, or medical facilities, and should try to utilize existing, valuable information that has been collected on students during their high school years.

- Counselors from both the school and the VR agency can work together to provide coordinated guidance to the students.

- Counselors might discuss these suggestions with classroom instructors (perhaps through a workshop), since many students turn to their instructors for career guidance.

- Above all, avoid stereotypes. Disabled students no longer need to be restricted to traditional occupational areas because of their disability—modifications and adaptations can be made successfully at most job sites with the interest and cooperation of the employee, employer and the assistance of information sources such as ABLEDATA, JAN, etc.

Support for Instructors

In finding ways to adapt vocational courses in postsecondary institutions to the needs of disabled students, the awareness and cooperation of instructors are of prime importance. According to one Disabled Student Services coordinator, "We find that the programs are most easily modified when the instructors have an open attitude and are willing to experiment with new ways of doing things. Instructors should know that their attitudes make a very real difference."

Instructors who are teaching handicapped students for the first time may need help from counselors or a coordinator of Disabled Student Services in envisioning ways to help those students succeed.

Ideally, a **team planning approach** is the best method to ensure that disabled students receive appropriate evaluation, guidance and counseling services, supplemental services, instructional materials, career goals, and job placement opportunities. Each of the following professionals can contribute a specific type of expertise to the team planning approach: vocational education instructors, vocational evaluator, Vocational Rehabilitation counselor, job placement coordinator, social worker, guidance/vocational counselor, physical therapist, media specialist, and of course—the disabled student.

In-service activities can greatly benefit staff members working with disabled students and provide information on a variety of issues:

—recognizing/understanding handicapping conditions
—determining appropriateness of instructional materials
—identifying resources (where to get assistance for self and/or students)
—modifying teaching techniques and curricula
—referral procedures for disabled students
—behavior modification techniques
—individualizing instruction

An **in-service workshop** for staff focusing on people who are handicapped and successful at their jobs can help create positive staff attitudes. These workshops can be planned with help of staff who have had successful experiences in teaching disabled students, in addition to assistance from local disability organizations (including Centers for Independent Living) or professional organizations and from books or catalogues annotated in the Selected Reading List.

Testing is an area in which instructors might have concerns. A student's disability may interfere with his/her ability to handle tests—either in physically manipulating the testing material or in understanding the instructions. Counselors can help instructors find ways to adapt the test situation without changing the academic standards. For instance a test could be given orally, on tape, or in Braille to a blind student, in a separate room without distractions to a student who has an emotional impairment, with an extended time period to a student with a learning disability, or in an accessible location for a student whose mobility is impaired. The HEATH fact sheet **Measuring Student Progress in the**

Classroom offers valuable suggestions for instructors, and is available free from the HEATH Resource Center.

Identifying and utilizing resources in the local school system and community can greatly improve the amount and quality of services provided to disabled students.

Job Development and Placement

Job development involves all the activities associated with identifying employers who are able and willing to offer positions of employment to graduates of the program once their training is completed. Many vocational schools have a person whose full-time responsibility is job development. In other schools the task is shared among the vocational counselors. Some programs also send teams of students, as part of their education, to interview potential employers and investigate job possibilities, and then to report their findings to the counselors or to their classes.

The job development coordinator who has handicapped students as part of his/her school population has a special responsibility. The first step in job development is to review the local employment situation and to identify jobs for which disabled students can be trained and placed. Some of the employers contacted might never have considered a handicapped employee before. The developer will have to look carefully at jobs at each workplace and discuss them with management in terms of task analysis and personal characteristics analysis—that is, consider the specific tasks each job entails and what characteristics are required of the person who performs them. An experienced vocational counselor who has seen disabled students at work can make those judgments when a specific job is observed.

With employers who have never hired people with disabilities before, the job developer will need to be an advocate. Often employers need to be convinced that disabled employees, with appropriate training and adaptive devices, will be an asset to their business. One counselor recommends that when approaching private sector business people, one should never use educational jargon—speak simply. Discuss concepts like benefits, cost-effectiveness, productivity, profits. This is what employers understand. Another says she often cites the DuPont Corporation's study of its 1,452 handicapped workers which found that 90% of them were average and above in job performance, stability, and safety. One could also point to other local firms that have hired handicapped graduates of the school, or recommend articles like "Enabling The Disabled" in the **Harvard Business Review** (July–August 1982) and "Hiring Your First Handicapped Person" in the **Journal of Cooperative Education** (Fall 1981).

Still another job developer says that whenever a letter or advertisement comes to her attention with "equal opportunity employer" written in the margin, she makes an appointment to visit that company. She goes in with a positive attitude, says how glad she is to see that the company is an equal opportunity employer, and asks questions about the exact requirements of each job. There is no better way to facilitate job development than to meet the potential employer and observe firsthand the actual work environment. She feels part of her success is that she is careful not to make potential employers feel defensive.

Job development requires the counselor to be ready at all times to check whatever he or she sees as a lead to employment opportunities. It involves working with industry, with agencies such as the local Governor's Committee on Employment of the Handicapped or Equal Opportunity Commission, local Employment Security Office, the Chamber of Commerce, Vocational Rehabilitation offices, job information banks, and with such disability organizations as a local Council for the Deaf or Job Opportunities for the Blind.

Other suggestions that job development people have offered include:

- Develop rapport with management of local businesses by having their representatives serve on Board of Advisors at the local school.
- Design a brochure showing the skills and successes of graduates, including those with disabilities.
- Provide for placement follow-up visits to the job site to provide support to the employer and recent employee. Ideally, follow-up services are provided monthly for 6 months and annually thereafter. Follow-up services are concluded only after a student is successfully employed.
- Host an Employer Recognition Banquet at the end of the year with awards to companies hiring the most students with disabilities. It might be possible to have sponsors underwrite the cost of the dinner and/or awards.
- Remember to follow-up on any contacts made in social, professional, or volunteer meetings who might be potential sources of jobs.

It has been estimated that up to 75% of job openings are filled by word of mouth, networking and direct contact. Many jobs are not formally advertised or listed. Disabled students can receive valuable job leads from parents, relatives, and friends.

CLASSROOM ADAPTATIONS

Each disabled student is a unique individual with varying degrees of ability and independence. If the instructor is unsure whether or not a student needs help, ask him or her directly. The student can and should be proactive whenever possible, requesting particular adaptations needed. A person with a disability wants to be as self-sufficient as possible.

The following are some ways a student may need and request assistance in a vocational classroom (see Selected Reading List for additional sources on curriculum modification). A student who uses a wheelchair or has another **mobility impairment** may need more time to get around the classroom, work station, or to handle new materials. The instructor could work with the student to be sure that the space is accessible, that

the needed materials are within reach, and that enough time is provided to keep up with class activities. If adaptations must be made in the classroom or with equipment and machinery, ask the student who will be using them to help determine exactly what changes must be made. Special materials such as oversized pencils, pencil grips, clipboards, lapboards for wheelchairs, and easy to grasp tools with larger handles should be requested as necessary.

A student who is **visually impaired** depends on non-visual means of learning. Instructors can help such students by familiarizing them with the classroom/workshop physical layout, as well as the specific tools, equipment, and materials that they will be using so they can develop appropriate mobility, safety, and motor skills. Sounds made from audible switches and signals help visually impaired students identify and locate objects. Touching a piece of equipment helps visually impaired students to comprehend a new task or procedure. Extending time, allowing students to tape record answers to tests or lengthy written assignments are some additional modifications that an instructor can make.

A student who is **deaf or hearing impaired,** on the other hand, relies heavily upon the sense of sight. This student may request a seat near the front of the classroom with a clear line of vision to the instructor, who should avoid standing directly in front of windows or other light sources which shadow the speaker. If the student uses an interpreter to sign or cue, the instructor should speak directly to the student—not the interpreter: face students when talking, make sure to have their attention before speaking, and maintain eye contact, and speak at a normal pace and volume for those students who lipread. Visual warning devices on equipment are also important aids for deaf students. (Write for free HEATH fact sheet **Hearing Impaired Students In Postsecondary Education.)**

Learning disabilities affect the way people receive or process information, which may be perceived inaccurately and misunderstood. Students with this hidden handicap have difficulty in one or more areas of learning, and therefore have difficulty learning through traditional teaching methods. Learning disabled students are, however, able to compensate for their disability by practicing some of the techniques that special educators have developed. Instructors who have students with specific learning disabilities should discuss with them how they learn best, visually, auditorily, or through "hands-on" experience. The vocational assessment could provide specific information on preferred learning style(s). Such students could also be referred to a learning disability tutoring center if they have not already had such support. Students' requests for extended time for certain activities or the use of taped textbooks or tape recorders in the classroom should be allowed. Programmed instructional materials and individualized instruction allows students to progress at their own pace and offers immediate feedback to learning disabled students who can be easily frustrated and confused. Students may also request to work in areas where there is a minimum amount of noise or other distraction. (Further resources are listed in the HEATH fact sheet **The Learning Disabled Adult and Postsecondary Education.**)

Speech impaired students may have difficulty communicating with others and may not be recognized as handicapped until they speak. Therefore, they may be shy and reluctant to participate in class activities orally. Most individuals with a speech impairment have normal intelligence and motor abilities but may need some support in learning to cope with their handicap. Some students may benefit from peer tutoring and small group activities which can promote positive interpersonal relationships with other classmates. If possible, the instructor should seek support from a speech therapist to determine which technique will be successful in assisting students to communicate more openly and effectively in class. Always maintain eye contact and allow students to complete their sentences so they feel comfortable and confident to speak in class.

Mentally handicapped learners have a limited learning capacity and may have difficulty in the following areas: performance, perceptual ability, verbal ability, and problem solving skills. Persons who are mentally handicapped may have difficulty expressing themselves verbally and/or understanding what is being said. Instructors should introduce new material gradually, providing repetition and review to ensure adequate comprehension. Materials should be at the appropriate reading level and instructional goals should be appropriate for their ability level. Recent research has demonstrated that with appropriate training and instructional techniques/materials people who are mentally handicapped can be competitively employed.

Emotionally impaired students may have difficulty concentrating, completing tasks, or accepting criticism. Students with "challenging behaviors" can be easily frustrated if they are given tasks that are too difficult or lengthy as they may have difficulty working under pressure. Behaviors can be discussed in terms of goals and expectations regarding their participation in the vocational program. The instructors can offer positive reinforcement for appropriate behavior and successful completion of tasks. Providing short, sequenced tasks that allow the student to work at his/her own pace without feeling pressured can stimulate learning while maintaining a success-oriented environment.

An instructor who feels unsure of a situation might discuss it first with the student directly. Vocational instructors familiar with the general categories of disabilities can request additional information and support from student personnel such as school or rehabilitation counselor, or other support person through the school, community agency, or a nearby Center for Independent Living. Advocacy groups and members of professional organizations can also suggest techniques to use with particular students.

Most importantly, be positive!

Both instructors and students can make a very real difference in successful classroom participation and integration of those with disabilities.

VOCATIONAL STUDENT ORGANIZATIONS (VSOs)

The U.S. Department of Education issued a policy statement on Vocational Student Organizations (VSOs) in 1981—recognizing nine VSOs as an integral part of vocational education programs. In addition, the Carl D. Perkins Vocational Act of 1984 recognizes the significance of vocational organization activities and includes them as part of its definition of vocational education. The different VSOs include the American Industrial Arts Student Association (AIASA), Distributive Education Clubs of America/Delta Epsilon Chi (DECA/DEC), Future Business Leaders of America/Phi Beta Lambda (FBLA/PBL), Future Farmers of America (FFA), Future Homemakers of America/Home Economics Related Occupations (FHA/Hero), Health Occupations Students of America (HOSA), National Postsecondary Agriculture Student Organization (NPASO), Office Education Association (OEA), and Vocational Industrial Clubs of America (VICA).

VSOs have been established to serve students in a specific vocational service area. All VSOs strive to promote leadership, citizenship, personal growth and knowledge—and significantly contribute to the work preparation process.

Most of the organizations include secondary and postsecondary divisions using the same name. However, the Future Business Leaders of America named its postsecondary division PBL or Phi Beta Lambda, Distributive Education Clubs of America named its postsecondary division DEC or Delta Epsilon Chi, and the National Postsecondary Agricultural Student Organization (NPASO) serves students in postsecondary institutions only.

Vocational student organizations are good vehicles for building skills and making friends. Club leaders are encouraged to make active efforts to include their classmates who are handicapped in the clubs. Meetings held in accessible locations and publicized with both written and spoken announcements well in advance will allow disabled members sufficient time to make whatever special arrangements they may need to participate. Clubs should make an effort to invite members who are disabled to planning sessions so that they can participate in competitions with their able-bodied peers.

INTERAGENCY COOPERATION

Preparing disabled students for suitable employment is best accomplished with the coordination and cooperation of appropriate service providers, i.e. educational institutions, rehabilitation agencies, employment services, job training programs, mental health, and other community service agencies. Without interagency planning, disabled students who often need multiple programs and services, may be excluded from available resources or receive services that are duplicated.

Current legislative mandates and federal initiatives require agencies receiving federal funds to plan, implement and evaluate collaborative efforts. Most recently, the Office of Special Education and Rehabilitation Services (OSERS) has responded to this need by establishing a national priority on improving transition—to successfully bridge the gap between school and employment—for all individuals with disabilties (1985). OSERS definition emphasizes the shared responsibiltiy of all adult service providers in the transition process and goes beyond the limited focus on coordination, to address the kind, quality, and appropriateness of services provided. The Vocational Studies Center, University of Wisconsin—Madison published the **Handbook on Developing Effective Linking Strategies** (1982) designed to assist agency personnel in the development and implementation of interagency linkages to improve vocational education and employment opportunities for handicapped persons (see Selected Reading List).

PERSONNEL PREPARATION

Vocational educators are continuously upgrading their knowledge and skills to stay current with the latest technological advances in their particular specialty area. As a result of mainstreaming, they now have the added responsiblity of improving their ability to teach occupational skills to disabled students. Through cooperative planning, vocational instructors can ensure the success of disabled students in vocational programs at a time when employers are seeking to recruit and hire qualified handicapped candidates.

Another way of making changes in personnel preparation of vocational educators is through participation in the National Associaton of Vocational Education Special Needs Personnel (NAVESNP) or the Special Needs Division of the American Vocational Association (AVA). There are active members of these two organizations in every state, most of which have formal, state chapters. These organizations provide opportunities for networking, professional exchange of information, etc. among vocational educators and special needs personnel who work with disadvantaged and/or disabled students.

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Equity is gaining importance to educators. In order to ensure the goal of fairness and impartiality, instructors and students are sharing the responsibility of working within a framework of mutually agreeable procedures. For the instructor, consistency and maintenance of standards are the most important factors to ensure that modifications do not give disabled students a competitive edge, but rather eliminate competitive disadvantage. A wide variety of adaptations developed in education and at the workplace are making the concept of equity a reality for disabled vocational students.

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SELECTED RESOURCE LIST

Association of Independent Colleges and Schools (AICS)
1 Dupont Circle, NW
Suite 350
Washington, D.C. 20036
(202) 659-2460
AICS is an educational association to which approximately 700 independent, nonprofit, and taxpaying colleges and schools belong. All of these accredited institutions offer job-related education. AICS publishes a monthly newsletter, career information brochures and a Directory of Educational Institutions and Accreditation Criteria.

ABLEDATA
National Rehabilitation
Information Center
4407 Eighth Street, NE
Washington, DC 20017–2299
(202) 635-5826, toll-free (800)
34–NARIC (Voice/TDD)
A national computerized databank giving information about commercially available rehabilitation aids and equipment. Also provides names of local distributors, repair and service centers, and resources for custom design.

American Vocational Association (AVA)
1410 King Street
Alexandria, VA 22314
(703) 683-3111
A national professional organization representing vocational teachers, guidance counselors, administrators, researchers, and teacher educators. The AVA publishes the **Vocational Education Journal** 8 times a year at a subscription rate of $20.00, included with membership dues.

Association on Handicapped Student Service Programs in Postsecondary Education (AHSSPPE)
P.O. Box 21192
Columbus, OH 43221
(614) 488-4972 (Voice/TDD)
AHSSPPE is a national nonprofit organization committed to promoting the full participation of individuals with disabilities in higher education. Membership includes subscriptions to the **ALERT** newsletter and the quarterly **AHSSPPE Bulletin** as well as reduced rates on conference fees and other publications.

Bureau of Apprenticeship and Training
Employment and Training
Administration
U.S. Department of Labor
601 D Street, NW
Washington, D.C. 20213
The Bureau lists the names and addresses of regional and state apprenticeship offices in a booklet called **National Apprenticeship Program**, available at no cost.

Job Accommodation Network (JAN)
P.O. Box 468
Morgantown, WV 26505
toll-free (800) JAN-PCEH
Operated by the President's Committee on Employment of the Handicapped, JAN offers a computerized database which provides information to employers about how to make accommodations for employees with particular disabilities.

Materials Development Center (MDC)
Stout Vocational Rehabilitation
Institute
University of Wisconsin-Stout
Menomonie, WI 54751
(715) 232-1342
The Materials Development Center (MDC) is the national central source for the collection, development, and dissemination of information and materials in the areas of vocational evaluation, work adjustment, rehabilitation facility management, job placement, and independent living. The **1986–87 MDC Catalog** contains publications and audiovisual materials available free of charge. In addition, their **Job Analysis Exchange Catalog** contains over 210 job analyses, cost per job analyses is $.50.

National Association of Trade and Technical School (NATTS)
2251 Wisconsin Avenue, NW
Washington, DC 20007
(202) 333-1021
This organization evaluates private trade and technical schools across the country for accreditation. Its handbook **Trade and Technical Careers and Training** lists those schools by state and is available free of charge. The brochure **How to Choose a Career and a Career School for the Student with a Disability** is also available free of charge.

National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210
toll-free (800) 848-4815
The mission of the Center is to increase the ability of agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. Write or call for free catalog about National Center products and services.

National Occupational Information Coordinating Committee (NOICC)
2100 M Street, NW
Suite 156
Washington DC 20037
(202) 653-5665
The National Occupational Information Coordinating Committee (NOICC) and its network of State Occupational Information Coordinating Committees (SOICCs) were established to promote the development and use of occupational information. NOICC has also promoted the development of career information delivery systems (CIDS). Write or call for list of NOICC publications and services.

Project Link (Mainstream, Inc.)
Mainstream, Inc., Project LINK
1200 15th Street, NW
Washington, DC 20005
(202) 833-1160 (Voice/TDD)

Mainstream, Inc., Project LINK
San Jacinto Tower
2121 San Jacinto, Suite 855
Dallas, TX 75201
(214) 969-0118 (Voice/TDD)
Project LINK, a program of Mainstream, Inc., is a centralized job development and placement program to assist unemployed job ready individuals with any kind of mental or physical disability obtain competitive employment. Project LINK services are free of charge to both employers and handicapped individuals.

RESNA, The Association for the Advancement of Rehabilitation Technology
RESNA, Suite 700
1101 Connecticut Avenue, NW
Washington, DC 20036
(202) 857-1199
RESNA serves as an information center to address the research, development, dissemination, integration and utilization of knowledge in rehabilitation technology. Write or call for information on membership, publications, and newsletter subscription.

Wisconsin Vocational Studies Center
University of Wisconsin-Madison
964 Educational Sciences Building
1025 W. Johnson Street
Madison, WI 53706
(608) 263-3696
The Wisconsin Vocational Studies Center has established a vocational education resource materials collection designed to help vocational educators successfully instruct students with disabilities. Write for **1986–87 Instructional Materials Catalog** available at no charge.

SELECTED READING LIST

Campus Access for Learning Disabled Students
Closer Look, Parent's Campaign for Handicapped Children and Youth
1201 16th Street, N.W.
Washington, DC 20036
1985, $17.95
Authored by Scheiber and Talpers this comprehensive guide contains a wealth of information for LD young adults, their parents, and professionals concerned with postsecondary options after high school. Options other than college, such as vocational training and employment are also discussed.

Career Planner: A Guide for Students With Disabilities (Second Edition, 1982)
Chaffey Community College,
Educational Resource Center
5885 Haven Avenue
Alta Loma, CA 91701
free upon request
This bibliography, authored by Smith, Hopkins, and Creasy, covers vocational guidance materials and activities, ideas about vocational guidance for disabled students, and information for counseling special populations—arranged by disability.

Employability Skills for the Special Needs Learner
Aspen Publishers, Inc.
PO Box 6018
Gaithersburg, MD 20877
toll-free (800) 638-8437
1982, $82.50
Authored by Jerry Wircenski, this 720 page looseleaf binder contains an integrated program of reading, math, and daily living skills necessary to make the transition from school to work.

ERIC Update: Postsecondary Vocational Education
National Center for Research in Vocational Education, Publications Office
Box R, 1960 Kenny Road
Columbus, OH 43210-1090
toll-free (800) 848-4815
1983, $4.95 (order #BB 65)
This 58 page booklet contains a computerized printout from the ERIC database of 122 abstracts on resources in vocational service areas including basic skills on the job, transition of special needs students to postsecondary vocational education, pre-apprenticeship training, and more.

Equity From A Special Education Perspective
National Center for Research in Vocational Education, Publications Office
Box R, 1960 Kenny Road
Columbus, OH 43210-1090
toll-free (800) 848-4815
1982, $2.35 (order #RD 214H)
In this 36 page booklet, Marc Hull discusses current funding, attitudes, the preparation of vocational education personnel to teach handicapped students, and more.

Extending Horizons: A Resource for Assisting Handicapped Youth in Their Transition from Vocational Education to Employment
National Center for Research in Vocational Education, Publications Office
Box R, 1960 Kenny Road
Columbus, OH 43210-1090
toll-free (800) 848-4815
1985, $30.00 for set (order #RD 257)
Authored by McKinney, Vreeburg, and West, this comprehensive resource provides a model for assisting handicapped youth in their transition from vocational education to employment. The set is adaptable to secondary and postsecondary programs and includes an In-Service Guide and six companion documents.

Handbook for Developing Effective Linking Strategies
The Vocational Studies Center
University of Wisconsin-Madison,
Publications Unit
265 Educational Sciences Building
1025 West Johnson Street
Madison WI 53706
(608) 263-2929
1982, $27.00
The Handbook, authored by Tindall, et. al., details strategies and pro-

vides models to help professionals develop a collaborative approach to serving handicapped students.

Handbook of Special Vocational Needs Education
Aspen Publishers, Inc.
PO Box 6018
Gaithersburg, MD 20877
toll-free (800) 638-8437
1980, $32.00
Edited by Gary Meers, the Handbook contains information on curriculum planning, modification and evaluation, support services, counseling, work experience and placement—from the contributions of 13 specialists in key content fields.

"It Isn't Easy Being Special"—Let's Help Special Needs Learners: A Resource Guide for Vocational Educators
National Center for Research in Vocational Education, Publications Office
Box R, 1960 Kenny Road
Columbus, OH 43210-1090
toll-free (800) 848-4815
1980, $3.25 (order #RD 184)
In this 44 page booklet, authors Denniston, Lust, Hutcheson, and others, provide strategies to assist teachers in assessing students, planning programs, coordinating services, modifying equipment, obtaining support services, and evaluating programs for handicapped, disadvantaged, and limited English-proficiency students in secondary or postsecondary vocational education programs.

OSERS NEWS in Print
OSERS
Switzer Building, Room 3132
330 C Street
Washington, DC
(202) 732-1723
The Office of Special Education and Rehabilitation Services publishes a quarterly newsletter **OSERS NEWS in Print;** write for special 1986 issue devoted to Transition.

Partnerships in Business and Education: Helping Handicapped Students Become A Part of the Job Training Partnership Act
The Vocational Studies Center
University of Wisconsin-Madison, Publications Unit
265 Educational Sciences Building
1025 West Johnson Street
Madison WI 53706
(608) 263-2929
1985, $36.00
Authored by Lloyd Tindall and others, this 700 page handbook for educators, private industry councils, community-based organizations and vocational rehabilitation personnel provides detailed information on how to obtain and use JTPA funds for the needs of handicapped youth and adults.

Puzzled About Educating Special Needs Students?
The Vocational Studies Center
University of Wisconsin-Madison, Publications Unit
265 Educational Sciences Building
1025 West Johnson Street
Madison WI 53706
(608) 263-2929
1980
A three-part collection of materials developed by a committee headed by Lloyd Tindall. The **Handbook** and **Annotated Bibliography** covers modifying vocational education programs for handicapped students and lists related publications available for $30.00. The **User's Guide** is for administrators developing inservice meetings and workshops—available for $8.00. Two audiovisual components: **Whatever It Takes** explores the concepts of vocational modification and **It Takes A Wider Circle** emphasizes the need for cooperative planning efforts—are available for $90.00 each.

Tools, Equipment and Machinery—Adapted for the Vocational Education and Employment of Handicapped People
The Vocational Studies Center
University of Wisconsin-Madison, Publications Unit
265 Educational Sciences Building
1025 West Johnson Street
Madison WI 53706
(608) 263-2929
1981, $35.00
The original catalog contains descriptions and illustrations of products modified for use in the vocational education and employment of handicapped people. A **Supplement** (1983) to the original catalog contains new and different products, also aimed at serving special needs people available for $32.00.

Training the Handicapped for Productive Employment
Aspen Publishers, Inc.
PO Box 6018
Gaithersburg, MD 20877
toll-free (800) 638-8437
1980, $33.00
Authored by Weisgerber, Dahl, and Appleby, this text provides the information needed to develop an effective job training and placement program.

Vocational Special Needs
American Technical Publishers, Inc.
12235 South Laramie Avenue
Alsip, IL 60658
toll-free (800) 323-3471
1985, $24.95
This Second Edition, 1985 text authored by Sarkees and Scott is designed for instructors working with special needs individuals in all areas of vocational education, and provides current information on program funding, identification of special needs students, individually prescribed programs, instructional techniques, and transition from school to work.

Prepared by Mona Hippolitus, HEATH Resource Center, August 1986.
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